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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/859,512	05/18/2001	Kiminori Tamai	208808US2	4273

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EXAMINER

PIZIALI, ANDREW T

ART UNIT	PAPER NUMBER
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1775

10

DATE MAILED: 08/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/859,512

Applicant(s)

TAMAI ET AL.

Examiner

Andr w T Piziali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 6, 7 and 14-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5, 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-5 and 8-13 in Paper No. 9 is acknowledged.

Specification

2. The disclosure is objected to because of the following: The specification discloses that the protective hard coating layer is on the conductive layer (page 18, lines 10-12), but in opposition to this structural order, and in opposition to the claimed subject matter, the specification also discloses that the multi-layer structure comprises a support, a hard coating layer, an anchor coating layer, and a conductive layer in that order (page 19, lines 4-8, and page 22, lines 1-6). Appropriate correction is requested.

Claim Objections

3. Claims 2 and 9 are objected to because of the following informalities: The parenthetical subject matter is redundant. Deletion of the parenthetical subject matter will obviate this objection. Appropriate correction is requested.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 1-5 and 8-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In independent claims 1 and 8 the surface resistance limitation is given in Ω/\square physical units, but surface resistance corresponds to Ω physical units while surface **resistivity** is conventionally written in Ω or Ω/\square physical units. It is unclear which property the applicant is claiming.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 8-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,662,962 to Kawata et al (hereinafter referred to as Kawata).

Regarding claims 8-10 and 12, Kawata discloses a transparent conductive multi-layer structure that comprises a substrate overlaid with a conductive layer containing fine conductive particles (column 2, lines 58-63, column 3, lines 51-55, and column 5, lines 11-23). Kawata discloses that the surface resistivity may range from 630 to 1700 Ω/\square and the visible light transmittance may range from 94.8 to 96 (columns 13 and 14, Tables 1 and 3).

Regarding claim 9, Kawata discloses that the particles are ITO (column 5, lines 11-23).

Regarding claim 10, Kawata discloses that the substrate may be glass (column 2, lines 58-63).

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Regarding claim 12, Kawata discloses that the structure may have a haze ranging from 0 to 1% (column 5, lines 5-10 and columns 13 and 14, Tables 1 and 3).

8. Claims 8-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Publication No. 08-199096 to Masahito et al. (hereinafter referred to as Masahito).

Regarding claims 8-10 and 12, Masahito discloses a transparent conductive multi-layer structure that comprises a substrate overlaid with a conductive layer containing fine conductive particles (Patent Abstract). Masahito discloses that the structure may have a surface resistance of 10 to $10^2 \Omega/\square$ (see entire document). Masahito does not disclose the visible light transmittance, but considering the substantially identical transparent conductive multi-layer structure of Masahito compared to the applicants' structure, it appears that the structure of Masahito would possess a visible light transmittance of at least 70%.

Regarding claim 9, Masahito discloses that the particles are ITO (Patent Abstract).

Regarding claim 10, Masahito discloses that the substrate may be glass (see entire document).

Regarding claim 12, Masahito discloses that the structure has a haze of less than 1% (see entire document).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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10. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawata in view of US Patent No. 6,398,900 to Hieda et al. (hereinafter referred to as Hieda).

Kawata discloses a transparent conductive multi-layer structure which comprises a substrate overlaid with a conductive layer containing fine conductive particles (column 2, lines 58-63, column 3, lines 51-55, and column 5, lines 11-23). Kawata does not disclose placing the structure on a substrate, but Hieda discloses that it is known to attach an electromagnetic wave shield structure to the front surface of a plasma display panel to shield electromagnetic waves and near-infrared rays generated from a plasma display panel (column 1, lines 18-31, column 4, lines 45-67). It would have been obvious to one having ordinary skill in the art at the time the invention was made to attach the electromagnetic wave shield of Kawata to a plasma display panel, as disclosed by Hieda, because the electromagnetic waves and near-infrared rays generated from the plasma display panel would be shielded.

Regarding claim 2, Kawata discloses that the particles are ITO (column 5, lines 11-23).

Regarding claim 3, Kawata discloses that the substrate may be glass (column 2, lines 58-63).

Regarding claim 4, Kawata discloses that the structure is overlaid with a hard coating layer (column 5, lines 11-23).

Regarding claim 5, Kawata discloses that the structure has a haze ranging from 0 to 1% (column 5, lines 5-10 and columns 13 and 14, Tables 1 and 3).

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawata as applied to claims 8-10 and 12 above, and further in view of US Patent No. 6,316,110 to Anzaki et al. (hereinafter referred to as Anzaki).

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Kawata does not disclose the use of an anchor layer and a hard coating layer, but Anzaki discloses that it is known to coat an electromagnetic wave shield with an adhesive layer and a hard coating resin layer to protect the shield from air and to prevent the glass from shattering when broken (column 6, lines 36-45 and column 7, lines 39-46). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include an anchoring adhesive layer and a hard coating resin layer to the structure of Kawata, as disclosed by Anzaki, because the layers would protect the shield from air and prevent the glass from shattering when broken.

12. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawata as applied to claims 8-10 and 12 above, and further in view of US Patent No. 5,886,819 to Murata et al. (hereinafter referred to as Murata).

Kawata does not mention roughening the surface of the article to increase the haze value, but Murata discloses that it is known to roughen the surface of an article to increase the haze value (column 1, lines 6-61). It would have been obvious to one having ordinary skill in the art at the time the invention was made to roughen the surface of the article of Kawata to acquire any desired haze value, because some applications desire a higher haze value.

13. Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masahito in view of US Patent No. 6,398,900 to Hieda et al. (hereinafter referred to as Hieda).

Masahito discloses a transparent conductive multi-layer structure which comprises a substrate overlaid with a conductive layer containing fine conductive particles (Patent Abstract). Masahito does not disclose placing the structure on a substrate, but Hieda discloses that it is known to attach an electromagnetic wave shield to the front surface of a plasma display panel to

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shield electromagnetic waves and near-infrared rays generated from a plasma display panel (column 1, lines 18-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to attach the electromagnetic wave shield of Masahito to a plasma display panel, as disclosed by Hieda, because the electromagnetic waves and near-infrared rays generated from the plasma display panel will be shielded.

Regarding claim 2, Masahito discloses that the particles are ITO (Patent Abstract).

Regarding claim 3, Masahito discloses that the substrate may be glass (see entire document).

Regarding claim 5, Masahito discloses that the structure has a haze of less than 1% (see entire document).

14. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masahito in view of Hieda as applied to claims 1-3 and 5 above, and further in view of US Patent No. 6,316,110 to Anzaki et al. (hereinafter referred to as Anzaki).

Masahito does not disclose the use of an anchor layer and a hard coating layer, but Anzaki discloses that it is known to coat an electromagnetic wave shield with an adhesive layer and a hard coating resin layer to protect the shield from air and to prevent the glass from shattering when broken (column 6, lines 36-45 and column 7, lines 39-46). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include an anchoring adhesive layer and a hard coat resin layer to the structure of Masahito, as disclosed by Anzaki, because the layers would protect the shield from air and prevent the glass from shattering when broken.

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15. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masahito as applied to claims 8-10 and 12 above, and further in view of US Patent No. 6,316,110 to Anzaki et al. (hereinafter referred to as Anzaki).

Masahito does not disclose the use of an anchor layer and a hard coating layer, but Anzaki discloses that it is known to coat an electromagnetic wave shield with an adhesive layer and a hard coating resin layer to protect the shield from air and to prevent the glass from shattering when broken (column 6, lines 36-45 and column 7, lines 39-46). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include an anchoring adhesive layer and a hard coat resin layer to the structure of Masahito, as disclosed by Anzaki, because the layers would protect the shield from air and prevent the glass from shattering when broken.

16. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masahito as applied to claims 8-10 and 12 above, and further in view of US Patent No. 5,886,819 to Murata et al. (hereinafter referred to as Murata).

Masahito does not mention roughening the surface of the article to increase the haze value, but Murata discloses that it is known to roughen the surface of an article to increase the haze value (column 1, lines 6-61). It would have been obvious to one having ordinary skill in the art at the time the invention was made to roughen the surface of the article of Masahito to acquire any desired haze value, because some applications desire a higher haze value.

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Conclusion

17. The following patents are cited to further show the relationship between surface resistance and surface resistivity:

Surface Resistance or Surface Resistivity?, Dr. Jaakko Paasi, VTT Industrial Systems, Research Note, 3/19/2002.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Piziali whose telephone number is (703) 306-0145. The examiner can normally be reached on Monday-Friday (8:00-4:30).

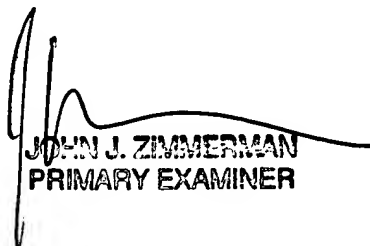
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-5665.



atp
August 1, 2002

Andrew T Piziali
Examiner
Art Unit 1775



JOHN J. ZIMMERMAN
PRIMARY EXAMINER